

WHAT IS CLAIMED IS:

1. A system for communicating map data for vehicle navigation comprising:
a vehicle terminal; and

5 a map data transmitting server, interconnected with the vehicle terminal
through a wireless network, for storing map data for vehicle navigation comprising a
plurality of cell data, and for transmitting cell data through the wireless network to the
vehicle terminal when requested by the vehicle terminal,
wherein the map comprises a plurality of cell layers in which cells are linearly
10 aligned, and each cell of a cell layer borders two adjacent cells of another cell layer that
is adjacent to the cell layer.

2. The system of claim 1, wherein each cell of the map is square.

15 3. The system of claim 1, wherein each cell of the cell layer borders the two
adjacent cells of the other cell layer that is adjacent to the cell layer by the same amount.

4. A method for communicating map data for vehicle navigation utilizing a server
for transmitting the map data through a wireless network, said map comprising a
20 plurality of cells, the method comprising:

determining a current position cell including a current position of a vehicle;
requesting transmission of cell data of one or more cells that are adjacent to the
current position cell; and

25 receiving cell data transmitted from the server correspondingly to the request,
wherein the map comprises a plurality of cell layers in which cells are linearly aligned,
and each cell of the cell layer borders two adjacent cells of another cell layer that is
adjacent to the cell layer.

30 5. The method of claim 4, wherein each cell of the map is square.

6. The method of claim 4, wherein each cell of the cell layer borders the two
adjacent cells of the other cell layer that is adjacent to the cell layer by the same amount.

7. The method of claim 4, further comprising calculating a proceeding direction

of the vehicle on the map data, wherein said one or more cells are positioned in the proceeding direction from the current position cell.

8. A server for transmitting map data for vehicle navigation, the server being
5 connected with a vehicle terminal through a wireless network and comprising:

a network interface for transmitting data through the wireless network;

a data storage unit for storing the map data for vehicle navigation; and

a processing unit for extracting cell data of cells from the map data and for
10 transmitting the extracted cell data through the wireless network when requested from
the vehicle terminal,

wherein the map data stored in the data storage unit comprises a plurality of
cell layers in which cells are linearly aligned, and each cell of the cell layer borders two
adjacent cells of another cell layer that is adjacent to the cell layer.

15 9. The server of claim 8, wherein each cell of the map is square.

10. The server of claim 8, wherein each cell of the cell layer borders the two
adjacent cells of the other cell layer that is adjacent to the cell layer by the same amount.